10-21-1997

DDASaccident025

Humanitarian Demining Accident and Incident Database
AID

DDAS Accident Report

Accident details

Report date:	22/01/2004	**Accident number:**	25
Accident time:	10:15	**Accident Date:**	20/10/1997
Where it occurred:	Xinavane village, Xinavane district, Maputo Province	**Country:**	Mozambique
Primary cause:	Management/control inadequacy (?)	**Secondary cause:**	Field control inadequacy (?)
Class:	Missed-mine accident	**Date of main report:**	18/11/1997
ID original source:	MC/TL/ADP-9/IG/TM/AC	**Name of source:**	CND/IND/ADP
Organisation:	[Name removed]		
Mine/device:	PMN AP blast	**Ground condition:**	route (verge), metal scrap
Date record created:	12/01/2004	**Date last modified:**	17/01/2004
No of victims:	1	**No of documents:**	3

Map details

Longitude:	32° 47' 13" E	**Latitude:**	25° 02' 14" S
Alt. coord. system:		**Coordinates fixed by:**	
Map east:		**Map north:**	
Map scale:		**Map series:**	
Map edition:		**Map sheet:**	
Map name:			

Accident Notes

inconsistent statements (?)

no independent investigation available (?)

inadequate equipment (?)

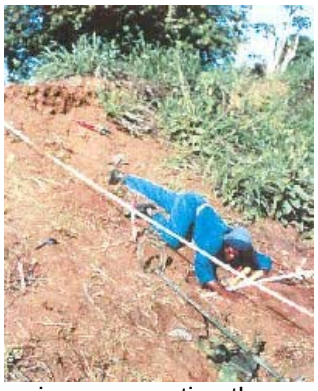
Accident report 1

The accident was internally investigated and a report dated 18th November 1997 was made available in 1998. The following summarises its content.

The accident occurred at 10:15 in an area of sandy soil. The site was an embankment that was part of a minefield that covered sugar cane and grass fields – as shown in the photograph below. The mine belt was 2-5 metres wide and most of it had three fences (home,

inner and enemy) indicating the extent. Where the accident occurred, all three fences were still in place.

There was a safe lane at the bottom of the embankment and deminers were working uphill from it. The victim had been working for fifteen minutes when he decided to clear a wire that was in front of his cleared area. He checked with the Schiebel detector and picked up a reading that he thought was the wire, so ignored it. He entered the uncleared area, cut the wire, and slipped back down the embankment.



The photograph above shows a deminer re-enacting the accident position.

As he slipped, his heel triggered a PMN and he suffered blast damage to the heel and ankle of his right foot.

Three PMNs had been located that day by other sections. Fragments found, and "other" site evidence (blast patterns) were taken to indicate that the mine was tilting outwards and that the victim did not catch the full effect of blast.

The platoon paramedic gave first aid. Access to the site required crossing a river at a distant point so it took fifteen minutes for a vehicle to arrive. The victim arrived at Maputo Central Hospital "before noon". An amputation of his lower leg was completed by 14:15.

A Section Commander made a statement saying that the victim crawled out of area. He said, "the deminer wasn't using the mine detector even excavation because where have been demining we found cutter and gloves".

The paramedic made a statement confirming the injuries and added that the victim "received necessary first aid and had an immediate air Medevac to Central Hospital. He remained conscious throughout the evacuation" [air evacuation is not mentioned elsewhere].

The victim made a statement that after the changeover he carried on where his partner left off, clearing uphill. "I didn't move the sticks as I was going forward. I cut the grass and when I was using the mine detector I got a sound, when I checked I found it was barbed wire and I walked in to push the barbed wire aside and I carried on clearing uphill thinking I was working in a cleared area. Fifteen minutes passed and when I was coming back to get the marking sticks I heard an explosion I fall down facing downhill".

Conclusion

The investigators concluded that the accident was caused by the victim's failure to conform to SOPs.

Recommendations

The investigators recommended that the demining group should "strengthen" SOPs to discourage entering uncleared areas.

Accident report 2

An IND accident report and internal investigation report was made available in November 2000. Detail that is at variance with, or additional to the information previously recorded is summarised in the following.

The IND accident report recorded that the victim was born in April 1976, so was 21 years old when the accident occurred. He was trained by UNMOZ in Tete, apparently in February 1995.

The report recommended that the group's SOPs "be reinforced to state even more strongly" that no one should move outside the taped areas. Platoon Commanders should be "reminded again" to brief deminers before starting work. Also, Platoon and Section commanders "must be more mobile" when checking the deminers.

The fences in place at the accident site were not intact. The barbed wire was present but the posts had been removed of rotted, leaving the wire on the ground. The embankment was topped by a windrow left by grading a road beyond the minefield. Windrow spoil got on top of the wire, but did not encroach on the mined area. The victim moved forward of the cleared area and cut a wire before slipping back and initiating the mine.

The investigator commented that the group should devise procedures to cover the demolition of exposed mines when the medical provision is absent after an accident. If the exposed mines were within a kilometre of a settlement, a guard of four men should be left until the medic returned and demolition could be safely carried out.

The victim was reported by the Section Commander to have been using a bolt-cutter at the time of the accident.

Victim Report

Victim number: 39	**Name:** [Name removed]
Age: 29	**Gender:** Male
Status: dog-handler	**Fit for work:** yes
Compensation: US$2,160	**Time to hospital:** 1 hour 40 minutes
Protection issued: Safety spectacles	**Protection used:** Safety spectacles

Summary of injuries:

INJURIES

severe Leg

AMPUTATION/LOSS

Leg Below knee

COMMENT

See medical report.

Medical report

A medical report by the senior trauma doctor at Maputo Central Hospital, dated 21st October 1997, stated that the victim arrived "before noon" and after clinical (illegible) and X-ray examination he decided to perform a below knee amputation.

An internal demining group compensation document (in Portuguese) summarised the victim's claim as injuries to the heel and ankle of his right foot. It states that there were some small scratches incurred during evacuation. His "recuperation period" was 60 days, and that his time off work was 45 days. He was deemed to have suffered a permanent incapacity for work of 50% and his permanent physical incapacity was judged to be 70%. He was also deemed to have permanent "aesthetic" damage. Unable to work as a deminer again, a recommendation for compensation of 45% x 30 x US$160 (salary) = US$2,160 was made.

The medic reported that the victim "nearly had a traumatic amputation on his right foot". He was "immediately" evacuated by air and remained conscious throughout his CASEVAC.

The victim arrived at Maputo Central Hospital “before noon”. After clinical examination and x-ray it was decided to perform a clinical amputation that was finished at 14:15. The victim received 2 units of blood. His "general condition is satisfactory" was reported at 3pm on 21st October 1997.

A medical report for the Health Ministry Legal Medicine service of Maputo was completed by Doctor [name removed] on 12th February 1998. Written in Portuguese, it was made available in November 2000. The following summarises its translated content.

The victim was 29 years old and married (DOB 14/04/76).

Findings of an expert examination of a work accident
According to a demining group report, the patient was the victim of an accident at work.

Information on the victim: it is noted that on 20th October 1997 while working as a deminer in Xinavane, he activated an anti-personnel mine, lost consciousness and was taken to H.C.M. Special Clinic where he was detained for 13 days due to injuries sustained on the lower limbs.

The victim complains of "Toraxicas pains", grief and occasional insomnia. Also "Lombalgias" which run down his lower limb, pain on the amputation point where there are temperature changes.

Hospital information
He was detained in H.C.M. Special Clinic for 20th October 1997 to 3rd November 1997 with the following diagnosis: F.P.A.F. (mine) exposed fracture type 3 on the right leg. Emergency operation carried out on the day of admission, amputation of the lower third of the right leg. Besides this treatment he also received blood transfusion, antibiotics, serum, vitamins, analgesic and physiotherapy.

Objective examination
Mentally stable. General condition good. Time and space awareness. Looks anxious (facially) and depressive.

There is a general atrophy of the thigh and a third of the upper right leg. Amputation at two thirds of the lower left leg. Good quality stitching and well padded stump.

Legal/Medical considerations
Based on the expert examination of the hospital and information received, we conclude that the patient was a victim of a mine accident which resulted in traumatic injuries produced by an explosive agent, an anti-personnel mine.

Conclusion
The victim's injuries are stable.
Healing time for the injuries is 60 days.
The victim will be incapacitated for work for 45 days.
Probability of permanent incapacity for work is 50%.
His physiological incapacity is 70%.

There is a 100% probability that he will be unable to work as a deminer again.
The "Pretium Deloris" is serious.
The injuries result in aesthetic problems.

In November 2000, the demining group reported that they employed the victim as a guard in an explosive store.

Analysis

The primary cause of this accident is listed as a *"Management/control inadequacy"* because the investigators determined that the demining group's SOPs were in need of improvement, which is a management responsibility. The failure to provide appropriate safety equipment (PPE) was a further management failing.

Inadequate field supervision meant that the victim's breach of the current SOP by advancing without using his detector went uncorrected, so the secondary cause is listed as a *“Field control inadequacy”*.

The “inadequate equipment (?)” noted refers to the issue of industrial safety spectacles as PPE.

Related papers

Photographs of the site showed that the accident occurred at the very edge of the windrow left by road grading (so the spoil had encroached on the mined area). Freshly cut barbed wire was protruding from the windrow spoil and a smooth area of exposed, loose soil was alongside it. The investigator decided that the smooth area was caused by the victim's "bottom" when he slipped and fell. In the photograph, it appeared to have been caused by his knees as he knelt to cut the wire. Another photograph showed the angle of the slope beyond the windrow and the vegetation cover (light grasses).

A sketch map of the minefield ring was included in the file - showing three lines of mines taking an erratic route around the settlement.

A letter (dated 18th November 1997) signed by the demining group's Director gave the opinion that the version of events recorded by the investigators was not true, but that more facts were needed to prove the real story. As a result of the accident the Director gave the deminers a break for December/January 1997 because they had been "in the field for three years".

Statements

Platoon commander

“It was about 10:15 when the deminer…step on the mine where he was demining. When it happen I was at 4 section explaining what to do because one of the team found two mines. Suddenly, I heard big bang, after that I left what I was doing at 4 section, running through to 1 section to assess the situation. At the area I found the section commander where the casualty was, sending a team to help. After this the platoon paramedic gave the first aid. As everything was done we start with CASEVAC procedures.”

Signed: 20/10/97.

Section commander

“It was about 10:15 when I heard explosion, it was the time when the teams doing handover, so I didn’t see how this happen. However when I gone close to accident location, I found the man crawling to the cleared area.

About what I saw at the area, the deminer wasn't using the mine detector even excavation because where have been demining we found bolt cutter and gloves."

Signed: 20/10/97

Victim's partner

"I declare that when it was 09:30 I start demining at new 1 metre land, after break at 09:00-09:30 hours. At 10:00 I did handover with my partner and I have cleared 2.5 meters, I did all procedure of handover to make sure that the area is well cleared and the area not cleared. I left all demining tools with my partner and I went to resting area. At resting area I was with more three deminers.

I can't tell you exactly how long we take before explosion. I guess that after 10 minutes we heard explosion and my partner shouting. I didn't see absolutely nothing."

Signed: 20/10/97

Medic

I herewith inform that on 20th October 1997 at 10:10, deminer from 2 Platoon stepped on a live mine causing an accident from which he nearly had a traumatic amputation on his right foot.

[The victim] received necessary first aid and had an immediate air casevac to Central Hospital. He remained conscious throughout the evacuation up to the Hospital.

Signed: undated

Victim

"After the tea break we went back to work and my partner was the first going into the clearance lane. He spent about 20 minutes. When the whistle blew I went down to the lane for changeover. We did the changeover drill and I got to the clearance lane. My partner had cleared about 2.5m and I carried on clearing uphill. I didn't move the sticks as I was going forward, I cut the grass and when I was using the detector I got a sound, when I checked I found it was barbed wire and I walked in to push the barbed wire aside and I carried on cleared uphill thinking that I was working in a cleared area. 15 minutes passed and when I was coming back to get the marking sticks I heard an explosion I fall down facing downhill. I don't know how long I was laying down till I was evacuated."

Signed: undated